

DS90
8426

Page 1 of 7



HL

OIPE

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/931,795

DATE: 05/20/2002
TIME: 11:48:42

Input Set : A:\09931795.txt
Output Set: N:\CRF3\05202002\I931795.raw

4 <110> APPLICANT: ROZEN, Rima
7 <120> TITLE OF INVENTION: cDNA FOR HUMAN METHYLENETETRAHYDROFOLATE
8 REDUCTASE AND USES THEREOF
11 <130> FILE REFERENCE: 04844/005003
13 <140> CURRENT APPLICATION NUMBER: 09/931,795
14 <141> CURRENT FILING DATE: 2001-08-16
16 <150> PRIOR APPLICATION NUMBER: US 09/592,595
17 <151> PRIOR FILING DATE: 2000-06-12
19 <150> PRIOR APPLICATION NUMBER: US 09/258,928
20 <151> PRIOR FILING DATE: 1999-03-01
22 <150> PRIOR APPLICATION NUMBER: US 08/738,000
23 <151> PRIOR FILING DATE: 1997-02-12
25 <150> PRIOR APPLICATION NUMBER: PCT/CA95/00314
26 <151> PRIOR FILING DATE: 1995-05-25
28 <150> PRIOR APPLICATION NUMBER: GB 9410620.0
29 <151> PRIOR FILING DATE: 1994-05-26
31 <160> NUMBER OF SEQ ID NOS: 18
33 <170> SOFTWARE: FastSEQ for Windows Version 4.0
35 <210> SEQ ID NO: 1
36 <211> LENGTH: 2220
37 <212> TYPE: DNA
38 <213> ORGANISM: Homo sapiens
40 <220> FEATURE:
41 <221> NAME/KEY: CDS
42 <222> LOCATION: (1)...(1980)
44 <400> SEQUENCE: 1
45 aat tcc gga gcc atg gtg aac gaa gcc aga gga aac agc agc ctc aac 48
46 Asn Ser Gly Ala Met Val Asn Glu Ala Arg Gly Asn Ser Ser Leu Asn
47 1 5 10 15
49 ccc tgc ttg gag ggc agt gcc agc agt ggc agt gag agc tcc aaa gat 96
50 Pro Cys Leu Glu Gly Ser Ala Ser Ser Gly Ser Glu Ser Ser Lys Asp
51 20 25 30
53 agt tcg aga tgt tcc acc ccg ggc ctg gac cct gag cggt cat gag aga 144
54 Ser Ser Arg Cys Ser Thr Pro Gly Leu Asp Pro Glu Arg His Glu Arg
55 35 40 45
57 ctc cgg gag aag atg agg cgg cga ttg gaa tct ggt gac aag tgg ttc 192
58 Leu Arg Glu Lys Met Arg Arg Leu Glu Ser Gly Asp Lys Trp Phe
59 50 55 60
61 tcc ctg gaa ttc ttc cct cgt cga act gct gag gga gct gtc aat ctc 240
62 Ser Leu Glu Phe Phe Pro Pro Arg Thr Ala Glu Gly Ala Val Asn Leu
63 65 70 75 80
65 atc tca agg ttt gac cgg atg gca gca ggt ggc ccc ctc tac ata gac 288
66 Ile Ser Arg Phe Asp Arg Met Ala Ala Gly Pro Leu Tyr Ile Asp

ENTERED

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/931,795

DATE: 05/20/2002
TIME: 11:48:42

Input Set : A:\09931795.txt
Output Set: N:\CRF3\05202002\I931795.raw

| | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|
| 133 | tgg | gct | ctc | agt | gcc | cac | ccc | aag | cgc | cga | gag | gaa | gat | gta | cgt | ccc | | 1104 | | |
| 134 | Trp | Ala | Leu | Ser | Ala | His | Pro | Lys | Arg | Arg | Glu | Glu | Asp | Val | Arg | Pro | | | | |
| 135 | | | | | | | | | | | | | | | | | 355 | 360 | 365 | |
| 137 | atc | ttc | tgg | gcc | tcc | aga | cca | aag | agt | tac | atc | tac | cgt | acc | cag | gag | | 1152 | | |
| 138 | Ile | Phe | Trp | Ala | Ser | Arg | Pro | Lys | Ser | Tyr | Ile | Tyr | Arg | Thr | Gln | Glu | | | | |
| 139 | | | | | | | | | | | | | | | | | 370 | 375 | 380 | |
| 141 | tgg | gac | gag | ttc | cct | aac | ggc | cgc | tgg | ggc | aat | tcc | tct | tcc | cct | gcc | | 1200 | | |
| 142 | Trp | Asp | Glu | Phe | Pro | Asn | Gly | Arg | Trp | Gly | Asn | Ser | Ser | Ser | Pro | Ala | | | | |
| 143 | | | | | | | | | | | | | | | | | 385 | 390 | 395 | 400 |
| 145 | ttt | ggg | gag | ctg | aag | gac | tac | tac | ctc | tcc | tac | ctg | aag | agc | aag | tcc | | 1248 | | |
| 146 | Phe | Gly | Glu | Leu | Lys | Asp | Tyr | Tyr | Leu | Phe | Tyr | Leu | Lys | Ser | Lys | Ser | | | | |
| 147 | | | | | | | | | | | | | | | | | 405 | 410 | 415 | |
| 149 | ccc | aag | gag | gag | ctg | ctg | aag | atg | tgg | ggg | gag | gag | ctg | acc | agt | gaa | | 1296 | | |
| 150 | Pro | Lys | Glu | Glu | Leu | Leu | Lys | Met | Trp | Gly | Glu | Glu | Leu | Thr | Ser | Glu | | | | |
| 151 | | | | | | | | | | | | | | | | | 420 | 425 | 430 | |
| 153 | gca | agt | gtc | ttt | gaa | gtc | ttt | gtt | ctt | tac | ctc | tcg | gga | gaa | cca | aac | | 1344 | | |
| 154 | Ala | Ser | Val | Phe | Glu | Val | Phe | Val | Leu | Tyr | Leu | Ser | Gly | Glu | Pro | Asn | | | | |
| 155 | | | | | | | | | | | | | | | | | 435 | 440 | 445 | |
| 157 | cgg | aat | ggt | cac | aaa | gtg | act | tgc | ctg | ccc | tgg | aac | gat | gag | ccc | ctg | | 1392 | | |
| 158 | Arg | Asn | Gly | His | Lys | Val | Thr | Cys | Leu | Pro | Trp | Asn | Asp | Glu | Pro | Leu | | | | |
| 159 | | | | | | | | | | | | | | | | | 450 | 455 | 460 | |
| 161 | gcg | gct | gag | acc | agc | ctg | ctg | aag | gag | gag | ctg | ctg | cgg | gtg | aac | cgc | | 1440 | | |
| 162 | Ala | Ala | Glu | Thr | Ser | Leu | Leu | Lys | Glu | Glu | Leu | Leu | Arg | Val | Asn | Arg | | | | |
| 163 | | | | | | | | | | | | | | | | | 465 | 470 | 475 | 480 |
| 165 | cag | ggc | atc | ctc | acc | atc | aac | tca | cag | ccc | aac | atc | aac | ggg | aag | ccg | | 1488 | | |
| 166 | Gln | Gly | Ile | Leu | Thr | Ile | Asn | Ser | Gln | Pro | Asn | Ile | Asn | Gly | Lys | Pro | | | | |
| 167 | | | | | | | | | | | | | | | | | 485 | 490 | 495 | |
| 169 | tcc | tcc | gac | ccc | atc | gtg | ggc | tgg | ggc | ccc | agc | ggg | ggc | tat | gtc | ttc | | 1536 | | |
| 170 | Ser | Ser | Asp | Pro | Ile | Val | Gly | Trp | Gly | Pro | Ser | Gly | Gly | Tyr | Val | Phe | | | | |
| 171 | | | | | | | | | | | | | | | | | 500 | 505 | 510 | |
| 173 | cag | aag | gcc | tac | tta | gag | ttt | ttc | act | tcc | cgc | gag | aca | gcg | gaa | gca | | 1584 | | |
| 174 | Gln | Lys | Ala | Tyr | Leu | Glu | Phe | Phe | Thr | Ser | Arg | Glu | Thr | Ala | Glu | Ala | | | | |
| 175 | | | | | | | | | | | | | | | | | 515 | 520 | 525 | |
| 177 | ctt | ctg | caa | gtg | ctg | aag | aag | tac | gag | ctc | cgg | gtt | aat | tac | cac | ctt | | 1632 | | |
| 178 | Leu | Leu | Gln | Val | Leu | Lys | Lys | Tyr | Glu | Leu | Arg | Val | Asn | Tyr | His | Leu | | | | |
| 179 | | | | | | | | | | | | | | | | | 530 | 535 | 540 | |
| 181 | gtc | aat | gtg | aag | ggt | gaa | aac | atc | acc | aat | gcc | cct | gaa | ctg | cag | ccg | | 1680 | | |
| 182 | Val | Asn | Val | Lys | Gly | Glu | Asn | Ile | Thr | Asn | Ala | Pro | Glu | Leu | Gln | Pro | | | | |
| 183 | | | | | | | | | | | | | | | | | 545 | 550 | 555 | 560 |
| 185 | aat | gct | gtc | act | tgg | ggc | atc | ttc | cct | ggg | cga | gag | atc | atc | cag | ccc | | 1728 | | |
| 186 | Asn | Ala | Val | Thr | Trp | Gly | Ile | Phe | Pro | Gly | Arg | Glu | Ile | Ile | Gln | Pro | | | | |
| 187 | | | | | | | | | | | | | | | | | 565 | 570 | 575 | |
| 189 | acc | gta | gtg | gat | ccc | gtc | agc | ttc | atg | ttc | tgg | aag | gac | gag | gcc | ttt | | 1776 | | |
| 190 | Thr | Val | Val | Asp | Pro | Val | Ser | Phe | Met | Phe | Trp | Lys | Asp | Glu | Ala | Phe | | | | |
| 191 | | | | | | | | | | | | | | | | | 580 | 585 | 590 | |
| 193 | gcc | ctg | tgg | att | gag | cgg | tgg | gga | aag | ctg | tat | gag | gag | gag | tcc | ccg | | 1824 | | |
| 194 | Ala | Leu | Trp | Ile | Glu | Arg | Trp | Gly | Lys | Leu | Tyr | Glu | Glu | Glu | Ser | Pro | | | | |
| 195 | | | | | | | | | | | | | | | | | 595 | 600 | 605 | |
| 197 | tcc | cgc | acc | atc | atc | cag | tac | atc | cac | gac | aac | tac | ttc | ctg | gtc | aac | | 1872 | | |

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/931,795

DATE: 05/20/2002
TIME: 11:48:42

Input Set : A:\09931795.txt
Output Set: N:\CRF3\05202002\I931795.raw

| | | | | | | | | | | | | | | | | | |
|-----|-------------|-------------|--------------|------------|------------|------------|------------|------------|-----|-----|-----|-----|-----|-----|-----|------|------|
| 198 | Ser | Arg | Thr | Ile | Gln | Tyr | Ile | His | Asp | Asn | Tyr | Phe | Leu | Val | Asn | | |
| 199 | 610 | | | | 615 | | | | | | 620 | | | | | | |
| 201 | ctg | gtg | gac | aat | gac | ttc | cca | ctg | gac | aac | tgc | ctc | tgg | cag | gtg | gtg | 1920 |
| 202 | Leu | Val | Asp | Asn | Asp | Phe | Pro | Leu | Asp | Asn | Cys | Leu | Trp | Gln | Val | Val | |
| 203 | 625 | | | | | 630 | | | | | 635 | | | | 640 | | |
| 205 | gaa | gac | aca | ttg | gag | ctt | ctc | aac | agg | ccc | acc | cag | aat | gcg | aga | gaa | 1968 |
| 206 | Glu | Asp | Thr | Leu | Glu | Leu | Leu | Asn | Arg | Pro | Thr | Gln | Asn | Ala | Arg | Glu | |
| 207 | | | | | | 645 | | | | 650 | | | | 655 | | | |
| 209 | acg | gag | gct | cca | tgaccctgcg | tcctgacgcc | ctgcgttgga | gccactcctg | | | | | | | | 2020 | |
| 210 | Thr | Glu | Ala | Pro | | | | | | | | | | | | | |
| 211 | | | | 660 | | | | | | | | | | | | | |
| 213 | tcccgcccttc | ctcctccaca | gtgctgcttc | tcttggAAC | tccactctcc | ttcgtgtctc | | | | | | | | | | 2080 | |
| 214 | tcccaccccg | gcctccactc | ccccacctga | caatggcagc | tagactggag | tgaggcttcc | | | | | | | | | | 2140 | |
| 215 | aggctttcc | tggacctgag | tcggcccccac | atggAACCT | agtactctct | gtctaaaaaa | | | | | | | | | | 2200 | |
| 216 | aaaaaaaaaa | aaaggaaattc | | | | | | | | | | | | | | 2220 | |
| 218 | <210> | SEQ ID NO: | 2 | | | | | | | | | | | | | | |
| 219 | <211> | LENGTH: | 660 | | | | | | | | | | | | | | |
| 220 | <212> | TYPE: | PRT | | | | | | | | | | | | | | |
| 221 | <213> | ORGANISM: | Homo sapiens | | | | | | | | | | | | | | |
| 223 | <400> | SEQUENCE: | 2 | | | | | | | | | | | | | | |
| 224 | Asn | Ser | Gly | Ala | Met | Val | Asn | Glu | Ala | Arg | Gly | Asn | Ser | Ser | Leu | Asn | |
| 225 | 1 | | | | 5 | | | | | 10 | | | | | 15 | | |
| 226 | Pro | Cys | Leu | Glu | Gly | Ser | Ala | Ser | Ser | Gly | Ser | Glu | Ser | Ser | Lys | Asp | |
| 227 | | | | | | 20 | | | 25 | | | | 30 | | | | |
| 228 | Ser | Ser | Arg | Cys | Ser | Thr | Pro | Gly | Leu | Asp | Pro | Glu | Arg | His | Glu | Arg | |
| 229 | | | | | | 35 | | | 40 | | | 45 | | | | | |
| 230 | Leu | Arg | Glu | Lys | Met | Arg | Arg | Arg | Leu | Glu | Ser | Gly | Asp | Lys | Trp | Phe | |
| 231 | | | | | | 50 | | | 55 | | | 60 | | | | | |
| 232 | Ser | Leu | Glu | Phe | Phe | Pro | Pro | Arg | Thr | Ala | Glu | Gly | Ala | Val | Asn | Leu | |
| 233 | | | | | | 65 | | | 70 | | | 75 | | | 80 | | |
| 234 | Ile | Ser | Arg | Phe | Asp | Arg | Met | Ala | Ala | Gly | Gly | Pro | Leu | Tyr | Ile | Asp | |
| 235 | | | | | | 85 | | | 90 | | | 95 | | | | | |
| 236 | Val | Thr | Trp | His | Pro | Ala | Gly | Asp | Pro | Gly | Ser | Asp | Lys | Glu | Thr | Ser | |
| 237 | | | | | | 100 | | | 105 | | | 110 | | | | | |
| 238 | Ser | Met | Met | Ile | Ala | Ser | Thr | Ala | Val | Asn | Tyr | Cys | Gly | Leu | Glu | Thr | |
| 239 | | | | | | 115 | | | 120 | | | 125 | | | | | |
| 240 | Ile | Leu | His | Met | Thr | Cys | Cys | Arg | Gln | Arg | Leu | Glu | Glu | Ile | Thr | Gly | |
| 241 | | | | | | 130 | | | 135 | | | 140 | | | | | |
| 242 | His | Leu | His | Lys | Ala | Lys | Gln | Leu | Gly | Leu | Lys | Asn | Ile | Met | Ala | Leu | |
| 243 | | | | | | 145 | | | 150 | | | 155 | | | 160 | | |
| 244 | Arg | Gly | Asp | Pro | Ile | Gly | Asp | Gln | Trp | Glu | Glu | Glu | Gly | Gly | Phe | | |
| 245 | | | | | | 165 | | | 170 | | | 175 | | | | | |
| 246 | Asn | Tyr | Ala | Val | Asp | Leu | Val | Lys | His | Ile | Arg | Ser | Glu | Phe | Gly | Asp | |
| 247 | | | | | | 180 | | | 185 | | | 190 | | | | | |
| 248 | Tyr | Phe | Asp | Ile | Cys | Val | Ala | Gly | Tyr | Pro | Lys | Gly | His | Pro | Glu | Ala | |
| 249 | | | | | | 195 | | | 200 | | | 205 | | | | | |
| 250 | Gly | Ser | Phe | Glu | Ala | Asp | Leu | Lys | His | Leu | Lys | Glu | Lys | Val | Ser | Ala | |
| 251 | | | | | | 210 | | | 215 | | | 220 | | | | | |
| 252 | Gly | Ala | Asp | Phe | Ile | Ile | Thr | Gln | Leu | Phe | Phe | Glu | Ala | Asp | Thr | Phe | |

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/931,795

DATE: 05/20/2002
TIME: 11:48:42

Input Set : A:\09931795.txt
Output Set: N:\CRF3\05202002\I931795.raw

| | | | | |
|-----|---|-----|-----|-----|
| 253 | 225 | 230 | 235 | 240 |
| 254 | Phe Arg Phe Val Lys Ala Cys Thr Asp Met Gly Ile Thr Cys Pro Ile | | | |
| 255 | 245 | 250 | 255 | |
| 256 | Val Pro Gly Ile Phe Pro Ile Gln Gly Tyr His Ser Leu Arg Gln Leu | | | |
| 257 | 260 | 265 | 270 | |
| 258 | Val Lys Leu Ser Lys Leu Glu Val Pro Gln Glu Ile Lys Asp Val Ile | | | |
| 259 | 275 | 280 | 285 | |
| 260 | Glu Pro Ile Lys Asp Asn Asp Ala Ala Ile Arg Asn Tyr Gly Ile Glu | | | |
| 261 | 290 | 295 | 300 | |
| 262 | Leu Ala Val Ser Leu Cys Gln Glu Leu Leu Ala Ser Gly Leu Val Pro | | | |
| 263 | 305 | 310 | 315 | 320 |
| 264 | Gly Leu His Phe Tyr Thr Leu Asn Arg Glu Met Ala Thr Thr Glu Val | | | |
| 265 | 325 | 330 | 335 | |
| 266 | Leu Lys Arg Leu Gly Met Trp Thr Glu Asp Pro Arg Arg Pro Leu Pro | | | |
| 267 | 340 | 345 | 350 | |
| 268 | Trp Ala Leu Ser Ala His Pro Lys Arg Arg Glu Glu Asp Val Arg Pro | | | |
| 269 | 355 | 360 | 365 | |
| 270 | Ile Phe Trp Ala Ser Arg Pro Lys Ser Tyr Ile Tyr Arg Thr Gln Glu | | | |
| 271 | 370 | 375 | 380 | |
| 272 | Trp Asp Glu Phe Pro Asn Gly Arg Trp Gly Asn Ser Ser Ser Pro Ala | | | |
| 273 | 385 | 390 | 395 | 400 |
| 274 | Phe Gly Glu Leu Lys Asp Tyr Tyr Leu Phe Tyr Leu Lys Ser Lys Ser | | | |
| 275 | 405 | 410 | 415 | |
| 276 | Pro Lys Glu Glu Leu Leu Lys Met Trp Gly Glu Glu Leu Thr Ser Glu | | | |
| 277 | 420 | 425 | 430 | |
| 278 | Ala Ser Val Phe Glu Val Phe Val Leu Tyr Leu Ser Gly Glu Pro Asn | | | |
| 279 | 435 | 440 | 445 | |
| 280 | Arg Asn Gly His Lys Val Thr Cys Leu Pro Trp Asn Asp Glu Pro Leu | | | |
| 281 | 450 | 455 | 460 | |
| 282 | Ala Ala Glu Thr Ser Leu Leu Lys Glu Glu Leu Leu Arg Val Asn Arg | | | |
| 283 | 465 | 470 | 475 | 480 |
| 284 | Gln Gly Ile Leu Thr Ile Asn Ser Gln Pro Asn Ile Asn Gly Lys Pro | | | |
| 285 | 485 | 490 | 495 | |
| 286 | Ser Ser Asp Pro Ile Val Gly Trp Gly Pro Ser Gly Gly Tyr Val Phe | | | |
| 287 | 500 | 505 | 510 | |
| 288 | Gln Lys Ala Tyr Leu Glu Phe Phe Thr Ser Arg Glu Thr Ala Glu Ala | | | |
| 289 | 515 | 520 | 525 | |
| 290 | Leu Leu Gln Val Leu Lys Lys Tyr Glu Leu Arg Val Asn Tyr His Leu | | | |
| 291 | 530 | 535 | 540 | |
| 292 | Val Asn Val Lys Gly Glu Asn Ile Thr Asn Ala Pro Glu Leu Gln Pro | | | |
| 293 | 545 | 550 | 555 | 560 |
| 294 | Asn Ala Val Thr Trp Gly Ile Phe Pro Gly Arg Glu Ile Ile Gln Pro | | | |
| 295 | 565 | 570 | 575 | |
| 296 | Thr Val Val Asp Pro Val Ser Phe Met Phe Trp Lys Asp Glu Ala Phe | | | |
| 297 | 580 | 585 | 590 | |
| 298 | Ala Leu Trp Ile Glu Arg Trp Gly Lys Leu Tyr Glu Glu Glu Ser Pro | | | |
| 299 | 595 | 600 | 605 | |
| 300 | Ser Arg Thr Ile Ile Gln Tyr Ile His Asp Asn Tyr Phe Leu Val Asn | | | |
| 301 | 610 | 615 | 620 | |

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/931,795

DATE: 05/20/2002

TIME: 11:48:43

Input Set : A:\09931795.txt

Output Set: N:\CRF3\05202002\I931795.raw



Creation date: 27-03-2003

Indexing Officer: EGEDLU - ESKINDER GEDLU

Team: CENTRALSCANPRINT

Dossier: 09931795

Legal Date: 27-01-2003

| No. | Doccode | Number of pages |
|-----|---------|-----------------|
| 1 | IDS | 2 |

Total number of pages: 2

Remarks:

Order of re-scan issued on